RG104 E-1 Box 141 Jul-Sep 1886

E-1

Mint of the United States at Philadelphia,
MELTING AND REFINING DEPARTMENT,

Philadelphia, 7th September 1886.

Sir,

Permit me to call your attention to the quality of the Anthracite, which we employ for melting silver bars into ingots. It has been for a long time very inferior to what we have been accustomed to use, so much so as to cause a loss to the Government in several ways. 1. It is too soft to produce the full amount of heat requisite for good melting in a given time, demanding the constant work of the melters to make it melt the usual amount of silver in a given time, thereby weakening the melters for accomplishing the enormous business demanded of them, and constantly endangering the good quality of the metal demanded of them. – 2. It requires a larger amount of this coal, and therefore at a greater cost than the price per ton, to accomplish the

amount of melting called for. — 3. It produces a larger amount of ash than the best burning coal, being therefore of less value to that extent in the quantity of real carbon fuel, and also in its absorbing a quantity of heat in melting that ash to cinder. — 4. Its ash shows a considerable percentage of iron, like red-ash coal generally, and hence its tendency to melt into slag, and choke the draft of the furnace, so that the melter is constantly at work clearing the furnace for draft. — 5. The quantity of oxide of iron is so great that at our high heats, (nearly white), some of the oxide is reduced to the metallic state, and we are obliged to face the great difficulty of separating silver from the iron, to the certainty of losing some silver by volatilization, both in the usual act of melting, and in the iron holding fast to silver on the sides of the furnace, & thus subjecting it to volatilization during the whole working of the furnace by the passage of the furnace draft at a white heat. So small amount of the losses in the

year's work may be fairly attributable to this last cause.

Indisposition early in August prevented my drawing attention to the above facts and views, and I sincerely hope that they may be examined carefully and fully. My opinion, formerly expressed, is now more fully established, that the Hand-picked, Hard-anthracite, of the same nature as we formerly used, is cheaper and better than we are now using, for melting the enormous amount of fine silver demanded of us by the Government. The subject is the more worth investigation because the amount of coin made daily in this Mint exceeds the production of any other Institution, of which I can find a Record, being now at the rate of 12,500 a.d.p. pounds daily, = more than 5½ tons of Silver Coin, or about Six tons daily.

Very respectfully,
I. A. C. Booth
M & R

Hon. D. M. Fox,
Superintendent

NARA RG104, Entry 1, Box 141

Mint of the United States at Philadelphia,
Melting and Refining Department,
Philadelphia,
September 7, 1886

Sir,

Permit me to call your attention to the quality of the Anthracite, which we employ for melting silver bars into ingots. It has been for a long time very inferior to what we have been accustomed to use, so much so as to cause a loss to the Government in several ways. 1. It is too soft to produce the full amount of heat requisite for good melting in a given time, demanding the constant work of the melters to make it melt the usual amount of silver in a given time, thereby weakening the Melters for accomplishing the enormous business demand of them, and constantly endangering the good quality of the metal demand of them. 2. It requires a larger amount of this coal, and therefore at a greater cost than the price per ton, to accomplish the amount of melting called for. 3. It produces a larger amount of ash than the best burning coal, being therefore of less value to that extent on the quantity of real carbon fuel, and also in its absorbing a quantity of heat in melting that ash to cinder. 4. Its ash shows a considerable percentage of iron, like red-ash coal generally, and hence its tendency to melt into slag, and choke the draft of the furnace, so that the melter is constantly at work, clearing the furnace for draft. 5. The quantity of oxide of iron is so great that at our high heats, (nearly white), some of the oxide is reduced to the metallic state, and we are obliged to face the great difficulty of separating silver from the iron, to the certainty of losing some silver by volatilization, both in the usual act of melting, and in the iron holding fast to silver on the sides of the furnace, & thus subjecting it to volatilization during the whole working of the furnace by the passage of the furnace draft at a white heat. No small amount of the losses in the year's work may be fairly attributable to this last cause.

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Very respectfully,
Jas. C. Booth
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Hon. D.M. Fox,
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